ENVIRONMENTAL ASSESSMENT

for

PROPOSED RULE TO ESTABLISH AN ADDITIONAL MANATEE PROTECTION AREA IN LEE COUNTY, FLORIDA

April 20, 2004

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I. Summary

We, the Fish and Wildlife Service (Service) propose to establish a manatee protection area in Lee County, Florida. We are taking this action under the Endangered Species Act and the Marine Mammal Protection Act to reduce the level of take of Florida manatees (*Trichechus manatus latirostris*). The area is a manatee refuge, where certain waterborne activities are regulated.

II. Introduction

A. SECTION ONE - PURPOSE AND NEED

1. Purpose of Action

The purpose for the corresponding action to this Environmental Assessment is the promulgation of a final rule to establish a manatee protection area in Pine Island-Estero Bay area in Lee County, Florida. We have determined, based upon our best professional judgment, that there is an imminent danger of take of one or more manatees and a final rule designating this area as a manatee refuge is necessary to prevent such taking. There is a history of manatee mortalities in the area as a result of collisions with watercraft. At least 14 carcasses of manatees killed in collisions with watercraft have been recovered in or immediately adjacent to the designated areas since 1999 (FWCC 2003), and two more carcasses have been recovered recently from sites that were former manatee speed zones eliminated by a State court ruling.

2. Introduction

The authority to establish protection areas for the Florida manatee is provided by the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), and the Marine Mammal Protection Act (MMPA) of 1972, as amended (16 U.S.C. 1361 *et seq.*), and published in Title 50 of the Code of Federal Regulations, Part 17, Subpart J. The Service may, by regulation, in accordance with 5 U.S.C. 553 and 43 CFR Part 14, establish manatee protection areas whenever there is substantial evidence showing such establishment is necessary to prevent the taking of one or more manatees. Furthermore, we may establish manatee protection areas on an emergency basis when we determine that there is substantial evidence that there is imminent danger of a taking of one or more manatees, and that such establishment is necessary to prevent such taking. "Take," as defined by the ESA, means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct. "Harm" is further defined as an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. "Harass" is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering [50 CFR 17.3].

The MMPA sets a general moratorium, with certain exceptions, on the take and importation of marine mammals and marine mammal products (section 101(a)) and makes it unlawful for any person to take, possess, transport, purchase, sell, export, or offer to purchase, sell, or export, any marine mammal or marine mammal product unless authorized. "Take," as defined by section 3 of the MMPA means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal. "Harassment" is defined under the MMPA as any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

We may establish two types of manatee protection areas—manatee refuges and manatee sanctuaries. A manatee refuge, as defined in 50 CFR 17.102, is an area in which we have determined that certain waterborne activities would result in the taking of one or more manatees, or that certain waterborne activities must be restricted to prevent the taking of one or more manatees, including but not limited to a taking by harassment. A manatee sanctuary is an area in which we have determined that any waterborne activity would result in the taking of one or more manatees, including but not limited to a taking by harassment. A waterborne activity is defined as including, but not limited to, swimming, diving (including skin and SCUBA diving), snorkeling, water skiing, surfing, fishing, the use of water vehicles and dredge and fill activities.

The West Indian manatee is federally listed as an endangered species under the ESA (32 FR 4001; 50 CFR 17.11) and the species is further protected as a depleted stock under the MMPA. Florida manatees, a subspecies of the West Indian manatee (Domning and Hayek 1986), live in freshwater, brackish, and marine habitats in coastal and inland waterways of the southeastern United States. The majority of the population can be found in Florida waters throughout the year, and nearly all manatees use the waters of peninsular Florida during the winter months. The manatee is a cold-intolerant species and requires warm water temperatures generally above 20° Celsius (68° Fahrenheit) to survive during periods of cold weather. During the winter months, most manatees rely on warm water from industrial discharges and natural springs for warmth. In warmer months, they expand their range and occasionally are seen as far north as Rhode Island on the Atlantic Coast and as far west as Texas on the Gulf Coast.

3. Need for Action

Long-term studies suggest that there are four relatively distinct regional populations of manatees in Florida: (a) the Northwest Region, along the Gulf of Mexico from Escambia County east and south to Hernando County; (b) the Upper St. Johns River Region, consisting of Putnam County from Palatka south to Lake and Seminole counties; (c) the Atlantic Region, consisting of counties along the Atlantic coast from Nassau County south to Miami-Dade County and that portion of Monroe County adjacent to the Florida Bay and the Florida Keys; and counties along the lower portion of the St. Johns River north of Palatka, including Putnam, St Johns, Clay and Duval counties; and (d) the Southwest Region, consisting of counties along the Gulf of Mexico from Pasco County south to Whitewater Bay in Monroe County.

Despite significant efforts dating back to the late 1970s and early 1980s, scientists have been unable to develop a useful means of estimating or monitoring trends in the size of the overall manatee population in the southeastern United States (O'Shea 1988; O'Shea *et al.* 1992; Lefebvre *et al.* 1995). Even though many manatees aggregate at warmwater refuges in winter and most, if not all, such refuges are known, direct counting methods (*i.e.*, by aerial and ground surveys) are unable to account for uncertainty in the number of animals that may be away from these refuges at any given time, the number of animals not seen because of turbid water, and other factors. The use of mark-resighting techniques to estimate manatee population size based on known animals in the manatee photo-identification database has also been impractical, as the proportion of unmarked manatees cannot be estimated.

The only data on population size include uncalibrated indices based on maximum counts of animals at winter refuges made within 1 or 2 days of each other. Based on such information in the late 1980s, the total number of manatees throughout Florida was originally thought to include at least 1,200 animals (Service 2001). Because aerial and ground counts at winter refuges are highly variable depending on the weather, water clarity, manatee behavior, and other factors (Packard *et al.* 1985; Lefebvre *et al.* 1995), interpretation of these data to assess short-term trends is difficult (Packard and Mulholland 1983; Garrott *et al.* 1994).

Beginning in 1991, the State of Florida initiated a statewide, synoptic, aerial survey program to count manatees in potential winter habitat during periods of severe cold weather (Ackerman 1995). These surveys are much more comprehensive than those used to estimate a minimum population during the 1980s. The highest statewide, minimum count from these surveys was 3,276 manatees in January 2001; the highest count on the east coast of Florida included 1,814 animals (January 2003) and the highest on the west coast included 1,756 (January 2001).

Due to the problems mentioned previously, we do not know what proportion of the total manatee population is counted in these surveys. These uncorrected counts do not provide a basis for assessing population trends, although trend analyses of temperature-adjusted aerial survey counts may provide insight to general patterns of population growth in some regions (Garrott *et al.* 1994, 1995; Craig *et al.* 1997; Eberhardt *et al.* 1999).

It is possible, however, to monitor the number of manatees using the Blue Spring (Volusia County) and Crystal River (Citrus County) warmwater refuges. At Blue Spring (in the Upper St. Johns River Region), with its unique combination of clear water and confined spring area, it has been possible to count the number of resident animals by identifying individual manatees from scar patterns. The data indicate that this group of animals has increased steadily since the early 1970s when it was first studied. During the 1970s, the number of manatees using the spring increased from 11 to 25 (Bengtson 1981). In the mid-1980s, about 50 manatees used the spring (Service 2001) and, by the winter of 1999-2000, the number had increased to 147 (Hartley 2001).

While aircraft synoptic surveys provide a "best estimate" of the minimum Florida manatee population size, there are no confidence intervals (derived through reliable, statistically based, population-estimation techniques) for these estimates. With the exception of a few places where

manatees may aggregate in clear, shallow water, not all manatees can be seen from aircraft because of water turbidity, depth, surface conditions, variable times spent submerged, and other considerations. Thus, results obtained during typical manatee synoptic surveys yield unadjusted partial counts. While these results are of value in providing information on where manatees occur, likely relative abundance in various areas, and seasonal shifts in manatee abundance, they do not provide good population estimates, nor can they reliably measure trends in the manatee population. Consequently, the Florida Manatee Recovery Plan (Service 2001) concludes that "despite considerable effort in the early 1980s, scientists have been unable to develop a useful means of estimating or monitoring trends in size of the overall manatee populations in the southeastern United States."

Population models employ mathematical relationships based on survival and reproduction rates to estimate population growth and trends in growth. A deterministic model (a model in which there are no random events) that uses classical mathematical approaches and various computational procedures with data on reproduction and survival of living, identifiable manatees suggests a maximum population growth rate of about 7 percent per year, excluding emigration or immigration (Eberhardt and O'Shea 1995). This maximum was based on studies conducted between the late 1970s and early 1990s in the well-protected winter aggregation area at Crystal River and did not require estimation of the population size. The analysis showed that the chief factor affecting the potential for population growth is survival of adults.

A population viability analysis (PVA), in which random events, such as red tide and extremely cold winters, are incorporated into a model, was carried out for manatees based on age-specific mortality rates estimated from the age distribution of manatees found dead throughout Florida from 1979 through 1992 (Marmontel *et al.* 1997). This method of estimating survival relied on certain assumptions that were not fully testable; despite this, the results again pointed out the importance of adult survival to population persistence. Given a population size that reflected a 1992 minimum population estimate, the PVA showed that if adult mortality as estimated for the study period were reduced by a modest amount (for example, from 11 percent down to 9 percent), the Florida manatee population would likely remain viable for many years. However, the PVA also showed that slight increases in adult mortality would result in extinction of manatees within the next 1,000 years.

This review demonstrates that using statewide population size "estimates" of any kind is scientifically weak for estimating population trends in manatees. The weight of scientific evidence suggests that the potential for population increases over the last two decades is strong for two protected aggregation areas. New population analyses, based on more recent (since 1992) information, are not yet available in the peer-reviewed literature.

In 2001, the Manatee Population Status Working Group (MPSWG) provided a statement summarizing what they believed to be the status of the Florida manatee at that time (Wildlife Trust 2001). The MPSWG stated that, for the Northwest and Upper St. Johns River regions, available evidence indicated that there had been a steady increase in animals over the last 25 years. The statement was less optimistic for the Atlantic Region due to an adult survival rate that

was lower than the rate necessary to sustain population growth. The MPSWG believed that this region had likely been growing slowly in the 1980s, but then may have leveled off or even possibly declined. They considered the status of the Atlantic Region to be "too close to call." Such finding was consistent with high levels of human-related and, in some years, cold-related deaths in this region. Regarding the Southwest Region, the MPSWG acknowledged that further data collection and analysis would be necessary to provide an assessment of the manatee's status. Preliminary estimates of adult survival available to the MPSWG at that time indicated that the Southwest Region was similar to the Atlantic Region and "substantially lower than [the adult survival estimates] for the Northwest and Upper St. Johns Regions." The Southwest Region was cited as having had high levels of watercraft-related deaths and injuries and natural mortality events (*i.e.*, red tide and severe cold).

Recent information suggests that the overall manatee population has grown since the species was listed in 1967. Based on data provided at the April 2002 Manatee Population Ecology and Management Workshop, we believe that the Northwest and Upper St. Johns River regions are approaching demographic benchmarks established in the Florida Manatee Recovery Plan (Service 2001) for reclassification from endangered to threatened status. We also believe that the Atlantic Region is close to meeting the downlisting benchmark for adult survival, at a minimum, and is close to meeting or exceeding other demographic criteria. We are less optimistic, however, regarding the Southwest Region. Although data are still insufficient or lacking to compare the Southwest Region's status to the downlisting/delisting criteria, preliminary data for adult survival indicate that this Region is below the benchmarks established in the recovery plan.

Although we are optimistic about the potential for recovery in three out of the four regions, it is important to clarify that in order to downlist or delist the manatee, pursuant to the ESA, all four regions must simultaneously meet the appropriate criteria as described in the Florida Manatee Recovery Plan (Service 2001). Additionally, either action would necessarily be based on a status assessment for the species throughout its range (including the United States and Caribbean) and would consider the factors, as described in section 4(a)(1) of the ESA (16 U.S.C. 1533(a)(1)), that determine whether any species is categorized as endangered or threatened.

In order for us to determine that an endangered species has recovered to a point that it warrants removal from the List of Endangered and Threatened Wildlife and Plants (50 CFR 17.11), the species must have improved in status to the point at which listing is no longer appropriate under the criteria set out in section 4(a)(1) of the ESA. That is, threats to the species must be reduced or eliminated such that the species no longer fits the definitions of threatened or endangered. While suggestions of increasing population size are very encouraging, there has been no confirmation that significant threats to the species, including human-related mortality, injury, and harassment, and habitat alteration, have been reduced or eliminated to the extent that the Florida manatee may be reclassified from endangered to threatened status. Pursuant to our mission, we continue to assess this information with the goal of meeting our manatee recovery objectives.

Threats to the Species

Human activities, and particularly waterborne activities, are resulting in the take of manatees. Human use of the waters of the southeastern United States has increased dramatically as a result of residential growth and increased visitation. This phenomenon is particularly evident in the State of Florida. The human population of Florida has grown by 246 percent since 1970, from 6.8 million to 16.7 million residents (U.S. Census Bureau 2002/2003), and is expected to exceed 18 million by 2010, and 20 million by the year 2020. According to a report by the Florida Office of Economic and Demographic Research (2000/2002), it is expected that, by the year 2010, 13.7 million people will reside in the 35 coastal counties of Florida. In a parallel fashion to residential growth, visitation to Florida has increased dramatically. It is expected that Florida will have 83 million visitors annually by the year 2020, up from 48.7 million visitors in 1998. In concert with this increase of human population growth and visitation is the increase in the number of watercraft that travel Florida waterways. In 2002, 961,719 vessels were registered in the State of Florida (Division of Highway Safety and Motor Vehicles 2003). This represents an increase of 59 percent since 1993.

Increases in the human population and the concomitant increase in human activities in manatee habitat compound the effect of such activities on manatees. Human activities in manatee habitat include direct and indirect effects. Direct impacts include injuries and deaths from watercraft collisions, deaths from water control structure operations, lethal and sublethal entanglements with recreational and commercial fishing gear, and alterations of behavior due to harassment. Indirect effects include habitat alteration and destruction, which include such activities as the creation of artificial warm water refuges, decreases in the quantity and quality of warm water in natural spring areas, changes in water quality in various parts of the State, the introduction of marine debris, and other, more general disturbances.

Manatee mortality has continued to climb steadily. Average annual total mortality in the 1990s (227.9) was nearly twice that of the 1980s (118.2). In 2002, 305 manatee deaths were documented in Florida. Total deaths over the past 5 years are almost three times greater than they were in the first half of the 1980s. Although a large part of this increase may be due to an increase in manatee abundance, rapid growth in human activities and development may also be significant factors. Over the past 5 years, human-related manatee mortality has accounted for 33 percent of all manatee deaths, with watercraft-related deaths accounting for 28 percent of the total. These rates are about 5 to 7 percent higher than the early 1980s, when about 28 percent of all deaths were human-related and 21 percent were due to watercraft.

The continuing increase in the number of recovered dead manatees throughout Florida has been interpreted as evidence of increasing mortality rates (Ackerman *et al.* 1995). Between 1976 and 1999, the number of carcasses collected in Florida increased at a rate of 5.8 percent per year, and deaths caused by watercraft strikes increased by 7.2 percent per year (Service 2002). Because the manatee has a low reproductive rate, a decrease in adult survivorship due to watercraft collisions could contribute to a long-term population decline (O'Shea *et al.* 1985). It is believed that a 1 percent change in adult survival likely results in a corresponding change in the rate of population growth or decline (Marmontel *et al.* 1997).

Collisions with watercraft are the largest cause of human-related manatee deaths. Data collected during manatee carcass salvage operations in Florida indicate that a total of 1,145 manatees (from a total carcass count of 4,545) are confirmed victims of collisions with watercraft (1978 to 2002). This number may underestimate the actual number of watercraft-related mortalities, since many of the mortalities listed as "undetermined causes" show evidence of collisions with vessels. Collisions with watercraft comprise approximately 25 percent of all manatee mortalities since 1978. Approximately 75 percent of all watercraft-related manatee mortality has taken place in 11 Florida counties (Brevard, Lee, Collier, Duval, Volusia, Broward, Palm Beach, Charlotte, Hillsborough, Citrus, and Sarasota) (FWCC: Florida Marine Research Institute (FMRI) Manatee Mortality Database 2003). The last 5 years have been record years for the number of watercraft-related mortalities.

Manatees are especially vulnerable to fast moving power boats. The slower a boat is traveling, the more time a manatee has to avoid the vessel and the more time the boat operator has to detect and avoid the manatee. Nowacek *et al*. (2000) documented manatee avoidance of approaching boats. Wells *et al*. (1999) confirmed that at a response distance of 20 meters, a manatee's time to respond to an oncoming vessel increased by at least 5 seconds if the vessel was required to travel at slow speed. Therefore, the potential for take of manatees can be greatly reduced if boats are required to travel at slow speed in areas where manatees can be expected to occur.

Manatees are also affected by other human-related activities. Impacts resulting from these activities include deaths caused by entrapment in water control structures, navigation locks, pipes and culverts; entanglement in ropes, lines, and nets; ingestion of fishing gear or debris; vandalism; and poaching (FMRI Manatee Mortality Database 2003). These activities have accounted for 124 manatee deaths since 1978, an average of more than four deaths per year. As with watercraft-related mortalities, these deaths also appear to be increasing, with 40 of these deaths occurring between 1998 and 2002 (an average of 8 deaths per year over the last 5 years).

B. SECTION TWO - LONG-RANGE GOALS AND OBJECTIVES

The long-range goals and objectives of Service actions are to promote the protection and recovery of the federally listed Florida manatee, so that at a future date, it will eventually be downlisted and subsequently removed from the Federal endangered species list.

Important solutions to problems that manatees are facing include the creation of manatee protection areas, enforcement of regulations to protect manatees and their habitat, education and outreach. The establishment of refuges will help promote the protection of manatees by reducing the occurrence of take within these areas. As Federal, state and local manatee protection zones are established and maintained, manatees will have a network of safe havens for traveling between feeding, resting and wintering areas. Mortality, injury, and harassment will be reduced as a result.

The Florida Manatee Recovery Plan, Third Revision, (Service 2001) established four objectives necessary to establish a sustainable population of manatees within the state of Florida. These objectives are to:

a. minimize causes of manatee disturbance, injury and mortality;
b. determine and monitor the status of the manatee population;
c. protect, identify, evaluate, and monitor manatee habitat;
d. facilitate manatee recovery through public awareness and education.

This rule primarily addresses objective "a": "minimize causes of manatee disturbance, injury and mortality." By establishing a refuge, we intend to reduce the occurrence of take related to human activities within the Pine Island-Estero Bay area.

C. SECTION THREE - ISSUES, CONCERNS AND OPPORTUNITIES IDENTIFIED

1. Issue 1 - Manatee Protection and Recovery

The Florida Manatee Recovery Plan, Third Revision (Service 2001), substantially addresses the issues, concerns and opportunities associated with manatee protection and recovery and is hereby referenced and included as an attachment to this environmental assessment.

2. Issue 2 - Recreational Access and Uses

The area identified in this rule serve a variety of recreational purposes. Most of the area within the refuge created by the emergency rule is used by boaters as travel corridors. All areas are within a few miles of public access points and can be accessed from public and private boat ramps, docks, or marinas. Designating this site as a refuge may slightly alter recreational use in some areas although the opportunities available in recent years will largely remain. The Service is aware of the impacts this rule on recreational users and has considered these in its review.

3. Issue 3 - Commercial Access and Uses

Several of the areas within the emergency refuge are used by commercial vessels engaged in the transportation of goods or provision of services. Other areas are located in charter, dive, and tour boat service areas. Many areas are used for commercial fishing, including the crabbing industry. Water-dependent facilities, such as bait and tackle shops, dive shops, and marinas, may also be affected by this rule.

4. Issue 4 - Local Economy

a. In General

The economic impacts of this rule would be due to the changes in speed zone restrictions in the manatee refuge areas. In addition to speed zone changes, the rule no longer allows for the speed zone exemption process in place under State regulations. Florida's Manatee Sanctuary Act, Florida Statute 370.12(2), and its implementing regulations, 68C-22.001 FAC, allows the State to provide exemptions from speed zone requirements for certain commercial activities, including fishing and events such as high-speed boat races. Under State law, commercial fishermen and professional fishing guides can apply for permits granting exemption from speed zone requirements in certain counties. Speed zone exemptions were issued to 27 permit holders in the former State zones which comprise the proposed manatee refuge area.

In order to gauge the economic effect of this rule, both benefits and costs must be considered. Potential economic benefits related to this rule include increased manatee protection and tourism related to manatee viewing, increased number of marine construction permits issued (estimated at 80 per month for family boat docks), increased boater safety, increased fisheries health, and decreased seawall maintenance costs. Potential economic costs are related to increased administrative activities related to implementing the rule and affected waterborne activities. Economic costs are measured primarily by the number of recreationists who use alternative sites for their activity or have a reduced quality of the waterborne activity experience at the designated sites. In addition, the rule will have some impact on commercial fishing because of the need to maintain slower speeds in some areas. The extension of slower speed zones in this rule is not expected to affect enough waterborne activity to create a significant economic impact (*i.e.*, an annual impact of over $100 million).

b. Economic Benefits

We believe that the designation of the Pine Island-Estero Bay Manatee Refuge will increase the level of manatee protection in these areas. To the extent that some portion of Florida's tourism is due to the existence of the manatee in Florida waters, the protection provided by this rule may result in an economic benefit to the tourism industry. We are not able to make an estimate of this benefit given available information.

In addition, due to reductions in boat wake associated with speed zones, property owners may experience some economic benefits related to decreased expenditures for maintenance and repair of shoreline stabilization structures (*i.e.*, seawalls along the water's edge). Speed reductions may also result in increased boater safety. Another potential benefit of slower speeds is that fisheries in these areas may be more productive because of fewer disturbances. These types of benefits cannot be quantified with available information.

Based on previous studies, we believe that this rule produces some economic benefits. However, given the lack of information available for estimating these benefits, the magnitude of these benefits are unknown.

c. Economic Costs

The economic impact of the designation of a manatee protection area results from the fact, that in certain areas, boats are required to go slower than under current conditions. Some impacts may be felt by recreationists who have to use alternative sites for their activity or who have a reduced quality of the waterborne activity experience at the designated sites because of the rule. Other impacts of the rule may be felt by commercial charter boat outfits, commercial fishermen, and agencies that perform administrative activities related to implementing the rule.

d. Affected Recreational Activities

For some boating recreationists, the inconvenience and extra time required to cross additional slow speed areas may reduce the quality of the waterborne activity or cause them to forgo the activity. This will manifest in a loss of consumer surplus to these recreationists. In addition, to the extent that recreationists forgo recreational activities, this could result in some regional economic impact. These impacts cannot be quantified because the number of recreationists and anglers using the designated sites are not known.

Recreationists engaging in cruising, fishing, and waterskiing may experience some inconvenience by having to go slower or use undesignated areas; however, the extension of slow speed zones is not likely to result in a significant economic impact.

Currently, not enough data are available to estimate the loss in consumer surplus that water skiers will experience. While some may use alternative sites, others may forgo the activity. The economic impact associated with these changes on demand for goods and services is not known. However, given the number of recreationists potentially affected and the fact that alternative sites are available, it is not expected to amount to a significant economic impact. From 2000 to 2003, speed zones were in place in this area and recreationists have adjusted their activities to accommodate them.

e. Affected Commercial Charter Boat Activities

Various types of charter boats use the waterways in the affected counties, primarily for fishing and nature tours. The number of charter boats using the Pine Island-Estero Bay is currently unknown. For nature tours, the extension of slow speed zones is unlikely to cause a significant impact, because these boats are likely traveling at slow speeds. The extra time required for commercial charter boats to reach fishing grounds could reduce onsite fishing time (an important consideration for paying customers) resulting in fewer charters. The fishing activity itself is likely to occur at a slow speed and will not be affected. Added travel time may affect the length of a trip, which could result in fewer trips overall, creating an economic impact.

f. Affected Commercial Fishing Activities

Several commercial fisheries will experience some impact due to the regulation. To the extent that the regulation establishes additional speed zones in commercial fishing areas, this may increase the time spent on the fishing activity, affecting the efficiency of commercial fishing.

Given available data, the impact on the commercial fishing industry of extending slow speed zones in the Pine Island-Estero Bay area cannot be quantified.

There are 27 active permit holders that were exempt from the speed limits in the proposed refuge area. Since there were no other permit holders, it is reasonable to expect that the final rule may only impact the 27 permit holders in the former State speed zones. They are primarily commercial fisherman and professional fishing guides. However, because the manatee refuge designations will not prohibit any commercial fishing activity and because there is a channel available for boats to travel up to 25 miles per hour in the affected areas, it is unlikely that the rule will result in a significant economic impact on the commercial fishing industry. It is important to note that in 2001, the total annual value of potentially affected fisheries is approximately $8.3 million (based on 2001 dollars); this figure represents the economic impact on commercial fisheries in these counties in the unlikely event that the fisheries would be entirely shut down, which is not the situation associated with this rule.

The only restrictions on commercial activity will result from the inconvenience of added travel time. Boats can continue to travel up to 25 mph in the navigation channels. Therefore, we believe that any economic effect on small commercial fishing or charter boat entities will not be significant.

g. Affected Small Businesses

Because specific information about earnings of small entities potentially affected (both the total level and the amount of earnings potentially affected by the rule) is not available, we examined county-level earnings for industries potentially impacted by the final rule. Selected economic characteristics of the affected county are shown in Table 1. For Lee County, the services sector represents the industry with the greatest earnings. The proportion of industry earnings attributable to amusement and recreation (a subcategory of the services industry potentially impacted by the rule) was relatively low. As a result, a small impact to the recreation sector is unlikely to have a significant effect on county-level income. Thus, a small impact to the fishing sector is unlikely to adversely affect county-level income. However, it may be significant for any of the 27 permit holders noted previously.

Table 1. Economic Characteristics of Lee County in Florida - 2000

Counties	Per capita personal income 2000 ($)	10-year annual growth of per capita income \a\ (percent)	Total personal income 2000 (000$)	10-year annual growth of total personal income \a\ (percent)	Total earnings by industry all industries (000$)	Amusement and recreation industry earnings		Fishing industry earnings	
						Thousands of dollars	Percent of total	Thousands of dollars	Percent of total
Lee	26,655	3.0	11,833,528	7.0	6,379,956	106,875	1.7	10,619	0.17
State of Florida	27,764	4.0	445,739,968	7.2	282,260,357	5,392,786	1.9	85,609	0.03

Source: Bureau of Economic Analysis (BEA), Regional Economic Information System, Regional Accounts Data, Local Area Personal Income (http://www.bea.doc.gov/bea/regional/reis/).
\a\Growth rates were calculated from 1990 and 2000 personal income data.

The indirect economic impact on small businesses that may result from reduced demand for goods and services from commercial entities is likely to be insignificant. An unknown portion of the establishments shown in Table 2 could be affected by this rule. Because the only restrictions on recreational activity result from added travel time, and alternative sites are available for all waterborne activities, we believe that the economic impact on small entities resulting from changes in recreational use patterns will not be significant. The economic impacts on small business resulting from this rule are likely to be indirect affects related to a reduced demand for goods and services if recreationists choose to reduce their level of participation in waterborne activities. Similarly, because the only restrictions on commercial activity result from the inconvenience of added travel time, and boats can continue to travel up to 25 miles per hour in the navigational channels, we believe that any economic impact on small commercial fishing or charter boat entities will not be significant.

The employment characteristics of Lee County are shown in Table 2 for the year 1997. We included the following SIC (Standard Industrial Classification) categories, because they include businesses most likely to be directly affected by the designation of a manatee refuge:

- Fishing, hunting, trapping (SIC 09)
- Water transportation (SIC 44)
- Miscellaneous retail (SIC 59)
- Amusement and recreation services (SIC 79)
- Non-classifiable establishments (NCE)

Table 2. Employment Characteristics of Lee County in Florida - 1997
Includes SIC Codes 09, 44, 59, 79, and NCE\a\)

				Select SIC Codes (includes SIC Codes 09, 44, 59, 79, and NCE\a\)				
County	Total Mid-March employment\b\ (all industries)	Mid-March employment\b\ (select SIC Codes)	Total establishments (all industries)	Total establishments	Number of establishments (1-4 employees)	Number of establishments (5-9 employees)	Number of establishments (10-19 employees)	Number of establishments (20+employees)
Lee	135,300	7,734	11,386	974	602	193	92	87

Source: U.S. Census County Business Patterns
(http://www.census.gov/epcd/cbp/view/cbpview.html).
\a\ Descriptions of the SIC codes included in this table as follows:
SIC 09--Fishing, hunting, and trapping
SIC 44--Water transportation
SIC 59--Miscellaneous retail service division.
SIC 79--Amusement and recreation services
NCE--non-classifiable establishments division

\b\ Table provides the high-end estimate whenever the Census provides a range of mid-March employment figures for select counties and SIC codes.

As shown in Table 2, the vast majority (over 80 percent) of these business establishments in Lee County have less than ten employees, with the largest number of establishments employing less than four employees. In addition, only 5.7 percent of total mid-March employment for industries in the affected county was in the industries likely to be affected by the rule. Any economic impacts associated with this rule will affect some proportion of these small entities.

Since the proposed rule is for the development of a manatee refuge, which only requires a reduction in speed, we do not believe the designation would cause significant economic effects on small businesses. Currently, available information does not allow us to quantify the number of small business entities such as charter boats or commercial fishing entities that may incur direct economic impacts due to the inconvenience of added travel times resulting from the rule, but it is safe to assume that the current 27 permit holders may constitute the affected parties for a final rule. An examination of county-level information indicates that these economic impacts will not be significant for the affected county.

If this proposed rule making establishes the Pine Island-Estero Bay as a permanent manatee refuge, public comments on the proposed rule will be used for further refinement of the impact on small entities and the general public. In addition, the inconvenience of slow speed zones may cause some recreationists to change their behavior, which may cause some loss of income to some small businesses. The number of recreationists that will change their behavior, and how their behavior will change, is unknown; therefore, the impact on potentially affected small business entities cannot be quantified. However, because boaters will experience only minimal added travel time in most affected areas and the fact that speed zones were in place until recently, we believe that this designation will not cause a significant economic impact on a substantial number of small entities.

III. Alternatives

A. SECTION ONE - ALTERNATIVES CONSIDERED IN DETAIL

1. Alternative 1 - Baseline Management (No Action)

Under the “No Action” alternative, the Service would not create a new refuge for the Florida manatee. The existing network of speed zones and protection areas would remain. We would rely on State and local agencies to establish any new restricted areas which may be necessary through county or state-wide manatee protection plans. We find that, based on our best professional judgment, there is substantial evidence indicating that no action will increase the likelihood that there will be imminent danger of take of one or more manatees.

2. Alternative 2 - Creation of the Pine Island-Estero Bay Manatee Refuge

This alternative is our preferred alternative. Adoption of this alternative will result in the designation of a manatee refuge in portions of Matlacha Pass, Caloosahatchee River, San Carlos Bay, Pine Island Sound, and Estero Bay where manatees are at risk from watercraft collisions. In contrast to alternative 1 and alternative 3, this alternative allows for better overall protection of the manatee while minimizing confusion for the public. The public will be properly notified that they have entered a federally regulated speed zone and the public can anticipate that they will remain in the speed zone throughout the entire established refuge.

B. SECTION TWO - ALTERNATIVES CONSIDERED BUT NOT ANALYZED

1. Alternative 3 - Establish protection in a portion of the areas

This alternative would preclude establishment of protection areas in the channels where vessel speeds are already regulated at 25 miles per hour. The interspersion of the navigation channels with the slow speed areas would make posting of the distinct areas impossible on a permanent basis. In order to accomplish an emergency designation, we need to take advantage of existing signs which can be easily modified with stickers to denote Federal designation. Consequently, this alternative is not appropriate for the imminent possibility of take of one or more manatees.

IV. Affected Environment

A. SECTION ONE - REFUGE ECOSYSTEM

1. Habitat

a. Location

The refuges are located within the waters of Lee County on the west coast of Florida.

b. Climate

The Florida climate is generally characterized as transitional between temperate and subtropical conditions in the northern portions of the state and tropical conditions found in the Keys. Summers are generally long, warm and relatively humid, while winters are mild with occasional periods of cold. The climate is influenced by warm ocean currents in the Atlantic Ocean and the Gulf of Mexico. Average temperatures during the winter months typically range from about 45° to 50° F with occasional cold fronts bringing temperatures down to 15° to 20° F for short periods of time.

c. Floodplain, Wetlands, and Other Aquatic Resources

The sites are aquatic habitats. The designation of a site as a refuge will result in restricted human activity in the area. These restrictions will regulate watercraft speeds within the manatee refuge. Research has shown that waves associated with boat traffic, especially at higher speeds, can

cause shoreline erosion and damage to emergent plants. Evidence of this has been shown where boat wash has removed the mud binder among shell substrate and loosens mangrove prop roots in Everglades National Park. Observations by officials indicate that many of the mangrove islands along heavily traveled canals and the Intracoastal Waterway are disappearing (Snow 1989). Planned management actions (*i.e.*, slow speeds) may act to reduce shoreline erosion and, therefore, the need for shoreline protection, such as bulkheads, in some areas. The reduced erosion and turbidity will be beneficial to floodplains, wetlands, and other aquatic resources such as submerged aquatic vegetation within the restricted zones. Designation of a site will also reduce prop-cutting in submerged aquatic vegetation and benefit other aquatic resources by minimizing disturbances caused by faster moving watercraft. These designations will not adversely impact area values as floodplains, wetlands, or other aquatic resources.

d. Water Quality

Water quality within the refuge varies. This variation is dependent upon the kinds of human activities that may be associated with the respective waterbodies and watersheds. The designation of speed zones within a refuge area may act to reduce some uses, such as water skiing and personal watercraft operation, which could contribute to degraded water quality. Overall, the resultant creation of speed zones will have a limited impact on water quality.

e. Ground Water

The refuge is not an important ground water recharge areas. The designation will not affect the ground water recharge or quality.

2. Wildlife

a. West Indian manatee

Manatee protection areas have been established at sites throughout coastal Florida where conflicts between boats and manatees have been well documented and where manatees are known to frequently occur. We are providing additional protection by establishing an additional manatee refuge. In accordance with 50 CFR 17.106, areas may be established on an emergency basis when such takings are imminent.

b. Other Listed Species

Other listed species will also be protected under this rule. These species include Gulf and short nose sturgeon, green sea turtles, hawksbill sea turtles, Kemp's ridley sea turtles, leatherback sea turtles, loggerhead sea turtles, wood storks and bald eagles. Sturgeon and other fishes may benefit from this rule inasmuch as damage to seagrasses and wetland fringes will be minimized by boat speed reductions and prohibitions which will minimize the effect of boat wakes on these resources. Sea turtles may benefit from these measures as well, especially in light of their vulnerability to boat strikes; the same boat speed reductions and prohibitions that are beneficial

to manatees should also help to minimize the number of boat and sea turtle interactions that may occur within the protected areas. Reduced boat speeds and prohibitions should help to minimize harassment associated with bird activities.

B. SECTION TWO - SOCIO-ECONOMIC COMPONENTS

1. Public Use and Facilities

The refuge described in this rule experiences varying types of human use. Affected waterborne activities include transiting, fishing, sailing, water-skiing, and personal watercraft use. The number of registered recreational vessels in Lee County in 2002 was 45,413 (Division of Highway Safety and Motor Vehicles 2003). Since the establishment of the refuge will continue the long established regulatory scheme, we believe the final rule will have no impact of the historic level of activity.

There are 27 State exemption holders whose use of the area will be affected. These individuals were allowed to exceed the State speed zones for the purposes of commercial fishing and/or guiding sport fishermen before the State zones were voided by the State courts (*Florida Fish and Wildlife Conversation Commission v. Wilkinson et al.*). There is no comparable exemption for these activities under Federal law. While guiding and commercial fishing are not prohibited activities, the increased travel times will cause these individuals to relocate their activities elsewhere.

2. Economic Conditions

We certify that this rule will not have a significant economic effect on a substantial number of small entities as defined under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). An initial/final Regulatory Flexibility Analysis is not required. Accordingly, a Small Entity Compliance Guide is not required.

3. Cultural Resources

Aquatic areas of the state have been historically important to indigenous and colonial cultures. Areas identified in this rule may have been used for food collection, navigation and trade. Restrictions resulting from the refuge designations will not adversely impact any archeological sites that may be present

V. Environmental Consequences

A. Alternative 1 - Baseline Management (No Action)

1. Proposed Action

Under the "No Action" alternative, we would not initiate any new management practices within the areas described in the rule. Failing to adopt appropriate protective measures within our authority and resources for preventing imminent take of manatees is not acceptable to the Service.

2. Effects on Manatees

The "No Action" alternative would not give the Service any additional capability in preventing take on manatees in areas with identified problems. Over the last 5 years, there have been at least 14 watercraft-related manatee deaths in the area, with protective measures in place and two more carcasses have been recovered recently from sites that were former State speed zones eliminated by the Court's ruling.

Overall, human related deaths have contributed to 33 percent of all reported manatee mortalities in the last 5 years. Without additional protective measures in areas with documented take of manatees that currently lack sufficient regulation, the number of human-related manatee deaths is expected to increase as public use of the waterways increases. The goal of the ESA, including species-specific recovery plans, is to recover listed species to sustainable population levels and to eventually down or delist. Without the ability to reduce potential take by designating refuges for this species, the Service is limited in methods available to it to protect the manatee. The Service believes that increases in human-related manatee mortality will continue. The Service finds that the "No Action" alternative is not acceptable due to the imminent and expected overall increase in take that will result as the public use of Florida's waterways continues to increase.

3. Site Description

If the baseline alternative is chosen, there would not be a site description because there would not be an establishment of Federal zones.

4. Reason for Determination

If "No Action" alternative were chosen, the Service would not be able to actively enforce the MMPA's general moratorium on the take of manatees. Since the State, as a result of a recent court decision, is unable to enforce the area, the manatee would be left with little or no protection in a critical site used for feeding, breeding, and refuge. Considering that this area historically has a high mortality rate for manatees, "No Action" in this particular location would be counter-productive to the Service's recovery efforts for the manatee and the Service's responsibility to implement and enforce the MMPA and ESA species-recovery mechanisms. The Service believes that "No Action" may substantially increase the likelihood of imminent danger that there will be a take of one or more manatees in the area because there are not adequate protective measures in place. Consequently, "No Action" is not a reasonable alternative when considering the nature of the final rule and the recovery goals of the Florida manatee.

5. Special Area Management

The "No Action" alternative would severely hinder that Service's ability to provide for special area management for the manatee in this location.

6. Effects on Public Use

The "No Action" alternative would allow current use of the waterways by humans to continue with no further regulation imposed by the Service. Public use of these areas and manatee deaths will continue to be monitored even if the areas are not designated as refuges. Use of the waterways by the public will continue to grow as the state's population and visitor numbers increase.

7. Conclusion

Due to this expected increase in human use of areas that manatees frequent and the related increase in potential for take, the Service finds that the "No Action" alternative is not acceptable.

B. Alternative 2 - Creation of Pine Island-Estero Bay Manatee Refuge

1. Proposed Action

This alternative is the Service's preferred alternative. Areas affected by this designation are listed below in the "Site Description."

2. Effects on Manatees

The designation of a manatee refuge in Lee County according to the Site Description which follows will likely prevent or substantially reduce the imminent danger that there will be a taking of one or more manatees.

3. Site Description:

i) Watercraft are required to proceed at slow speed all year in all waters of Matlacha Pass, south of a line that bears 90° and 270° from Matlacha Pass Green Channel Marker "77" (approximate latitude 26°40'00" North, approximate longitude 82°06'00" West), and north of Pine Island Road (State Road No. 78), excluding:

(A) the portion of the marked channel otherwise designated in 17.108(c)(15)(iii);

(B) all waters of Buzzard Bay east and northeast of a line beginning at a point (approximate latitude 26°40'00" North, approximate longitude 82°05'20" West) on the southwest shoreline of an unnamed mangrove island east of Matlacha Pass Green Channel Marker "77" and bearing 219° to the northeasternmost point (approximate latitude 26°39'58" North, approximate longitude 82°05'23" West) of another unnamed mangrove island, then running along the eastern shoreline of said island to its southeasternmost point (approximate latitude 26°39'36" North, approximate

longitude 81°05'09" West), then bearing 115°to the westernmost point (approximate latitude 26°39'34" North, approximate longitude 82°05'05" West) of the unnamed mangrove island to the southeast, then running along the western shoreline of said island to its southwesternmost point (approximate latitude 26°39'22" North, approximate longitude 82°04'53" West), then bearing 123° to the northwesternmost point (approximate latitude 26°39'21" North, approximate longitude 82°04'52" West) of an unnamed mangrove island, then running along the western shoreline of said island to its southeasternmost point (approximate latitude 26°39'09" North, approximate longitude 82°04'44" West), then bearing 103° to the northwesternmost point (approximate latitude 26°39'08" North, approximate longitude 82°04'41" West) of a peninsula on the unnamed mangrove island to the southeast, then running along the southwestern shoreline of said island to its southeasternmost point (approximate latitude 26°38'51" North, approximate longitude 82°04'18" West), then bearing 99° to the southernmost point (approximate latitude 26°38'50" North, approximate longitude 82°04'03" West) of the unnamed mangrove island to the east, then bearing 90°to the line's terminus at a point (approximate latitude 26°38'50" North, approximate longitude 82°03'55" West) on the eastern shoreline of Matlacha Pass; and

(C) all waters of Pine Island Creek and Matlacha Pass north of Pine Island Road (State Road No. 78) and west and southwest of a line beginning at a point (approximate latitude 26°39'29" North, approximate longitude 82°06'29" West) on the western shoreline of Matlacha Pass and bearing 160° to the westernmost point (approximate latitude 26°39'25" North, approximate longitude 82°06'28" West) of an unnamed island, then running along the western shoreline of said island to its southernmost point (approximate latitude 26°39'18" North, approximate longitude 82°06'24" West), then bearing 128° to the northernmost point (approximate latitude 26°39'12" North, approximate longitude 82°06'17" West) of an unnamed mangrove island to the south, then running along the eastern shoreline of said island to its southeasternmost point (approximate latitude 26°39'00" North, approximate longitude 82°06'09" West), then bearing 138° to a point (approximate latitude 26°38'45" North, approximate longitude 82°05'53" West) on the northern shoreline of Bear Key, then running along the northern shoreline of Bear Key to its easternmost point (approximate latitude 26°38'44" North, approximate longitude 82°05'46" West), then bearing 85° to the westernmost point (approximate latitude 26°38'45" North, approximate longitude 82°05'32" West) of Deer Key, then running along the northern shoreline of Deer Key to its easternmost point (approximate latitude 26°38'46" North, approximate longitude 82°05'22" West), then bearing 103° to the northwesternmost point (approximate latitude 26°38'45" North, approximate longitude 82°05'17" West) of the unnamed mangrove island to the east, then running along the western shoreline of said island to its southernmost point (approximate latitude 26°38'30" North, approximate longitude 82°05'04" West), then bearing 106° to the westernmost point (approximate latitude 26°38'30" North, approximate longitude 82°04'57" West) of the unnamed island to the southeast, then running along the northern and eastern shorelines of said island to a point (approximate latitude 26°38'23" North, approximate longitude 82°04'51" West) on its eastern shoreline, then bearing 113° to the northernmost point of West Island (approximate latitude 26°38'21" North, approximate longitude 82°04'37" West), then running along the western shoreline of West Island to the point where the line intersects Pine Island Road (State Road No. 78).

(ii) Watercraft are required to proceed at slow speed all year in all waters of Matlacha Pass, St. James Creek, and San Carlos Bay, south of Pine Island Road (State Road No. 78), north of a line 500 feet northwest of and parallel to the main marked channel of the Intracoastal Waterway, west of a line that bears 302° from Intracoastal Waterway Green Channel Marker "99" (approximate latitude 26°31'00" North, approximate longitude 82°00'52" West), and east of a line that bears 360° from Intracoastal Waterway Red Channel Marker "10" (approximate latitude 26°29'16" North, approximate longitude 82°03'35" West), excluding:

(A) the portions of the marked channels otherwise designated in 17.108(c)(13)(iv) and 17.108(c)(13)(v);

(B) all waters of Matlacha Pass south of Pine Island Road (State Road No. 78) and west of the western shoreline of West Island and a line beginning at the southernmost point (approximate latitude 26°37'25" North, approximate longitude 82°04'17" West) of West Island and bearing 149° to the northernmost point (approximate latitude 26°37'18" North, approximate longitude 82°04'12" West) of the unnamed mangrove island to the south, then running along the eastern shoreline of said island to its southernmost point (approximate latitude 26°36'55" North, approximate longitude 82°04'02" West), then bearing 163° to the line's terminus at a point (approximate latitude 26°36'44" North, approximate longitude 82°03'58" West) on the eastern shoreline of Little Pine Island;

(C) all waters of Matlacha Pass, Pontoon Bay, and associated embayments south of Pine Island Road (State Road No. 78) and east of a line beginning at a point (approximate latitude 26°38'12" North, approximate longitude 82°03'46" West) on the northwestern shoreline of the embayment on the east side of Matlacha Pass, immediately south of Pine Island Road and then running along the eastern shoreline of the unnamed island to the south to its southeasternmost point (approximate latitude 26°37'30" North, approximate longitude 82°03'22" West), then bearing 163° to the northwesternmost point of the unnamed island to the south, then running along the western shoreline of said island to its southernmost point (approximate latitude 26°37'15" North, approximate longitude 82°03'15" West), then bearing 186° to the line's terminus at a point (approximate latitude 26°37'10" North, approximate longitude 82°03'16" West) on the eastern shoreline of Matlacha Pass;

(D) all waters of Pine Island Creek south of Pine Island Road (State Road No. 78); and all waters of Matlacha Pass, Rock Creek, and the Mud Hole, west of a line beginning at a point (approximate latitude 26°33'52" North, approximate longitude 82°04'53" West) on the western shoreline of Matlacha Pass and bearing 22° to a point (approximate latitude 26°34'09" North, approximate longitude 82°04'45" West) on the southern shoreline of the unnamed island to the northeast, then running along the southern and eastern shorelines of said island to a point (approximate latitude 26°34'15" North, approximate longitude 82°04'39" West) on its northeastern shoreline, then bearing 24° to a point (approximate latitude 26°34'21" North, approximate longitude 82°04'36" West) on the southern shoreline of the large unnamed island to the north, then running along the southern and eastern shorelines of said island to a point (approximate latitude 26°34'31" North, approximate longitude 82°04'29" West) on its eastern

shoreline, then bearing 41° to the southernmost point (approximate latitude 26°34'39" North, approximate longitude 82°04'22" West) of another unnamed island to the northeast, then running along the eastern shoreline of said island to its northwesternmost point (approximate latitude 26°35'22" North, approximate longitude 82°04'07" West), then bearing 2° to the southernmost point (approximate latitude 26°35'32" North, approximate longitude 82°04'07" West) of the unnamed island to the north, then running along the eastern shoreline of said island to its northernmost point (approximate latitude 26°35'51" North, approximate longitude 82°03'59" West), then bearing 353° to the line's terminus at a point (approximate latitude 26°36'08" North, approximate longitude 82°04'01" West) on the eastern shoreline of Little Pine Island; and

(E) all waters of Punta Blanca Bay and Punta Blanca Creek, east of the eastern shoreline of Matlacha Pass and east and north of the eastern and northern shorelines of San Carlos Bay.

(iii) Watercraft may not exceed 25 miles per hour, all year, in all waters within the main marked channel in Matlacha Pass south of Green Channel Marker "77" (approximate latitude 26°40'00" North, approximate longitude 82°06'00" West) and north of a line perpendicular to the channel at a point in the channel ¼ mile northwest of the Pine Island Road Bridge (State Road No. 78).

(iv) Watercraft may not exceed 25 miles per hour, all year, in all waters within the main marked channel in Matlacha Pass south of a line perpendicular to the channel at a point in the channel ¼ mile southeast of the Pine Island Road Bridge (State Road No. 78), and north of a line 500 feet northwest of and parallel to the main marked channel of the Intracoastal Waterway (just north of Green Channel Marker "1").

(v) Watercraft may not exceed 25 miles per hour, all year, in all waters within the marked channel in Matlacha Pass that intersects the main Matlacha Pass channel near Green Channel Marker "15" (approximate latitude 26°31'57" North, approximate longitude 82°03'38" West) and intersects the main marked channel of the Intracoastal Waterway near Green Channel Marker "101" (approximate latitude 26°30'39" North, approximate longitude 82°01'00"West).

(vi) Watercraft are required to proceed at slow speed from April 1 through November 15 in all canals and boat basins of St. James City and the waters known as Long Cut and Short Cut; and all waters of Pine Island Sound and San Carlos Bay south of a line beginning at the southernmost tip (approximate latitude 26°31'28" North, approximate longitude 82°06'19" West) of a mangrove peninsula on the western shore of Pine Island approximately 2200 feet north of Galt Island and bearing 309° to the southeasternmost point (approximate latitude 26°31'32" North, approximate longitude 82°06'25" West) of another mangrove peninsula, then running along the southern shoreline of said peninsula to its southwesternmost point (approximate latitude 26°31'40" North, approximate longitude 82°06'38" West), then bearing 248° to a point (approximate latitude 26°31'40" North, approximate longitude 82°06'39" West) on the eastern shoreline of an unnamed mangrove island, then running along the southern shoreline of said island to its southwesternmost point (approximate latitude 26°31'39" North, approximate longitude 82°06'44" West), then bearing 206° to the line's terminus at the northernmost point of the Mac Keever Keys (approximate latitude 26°31'09" North, approximate longitude 82°07'09"

West), east of a line beginning at said northernmost point of the Mac Keever Keys and running along and between the general contour of the western shorelines of said keys to a point (approximate latitude 26°30'27" North, approximate longitude 82°07'08" West) on the southernmost of the Mac Keever Keys, then bearing 201° to a point (approximate latitude 26°30'01" North, approximate longitude 82°07'19" West) approximately 150 feet due east of the southeasternmost point of Chino Island, then bearing approximately 162° to Red Intracoastal Waterway Channel Marker "22" (approximate latitude 26°28'57" North, approximate longitude 82°06'55" West), then bearing approximately 117° to the line's terminus at Red Intracoastal Waterway Channel Marker "20" (approximate latitude 26°28'45" North, approximate longitude 82°06'38" West), north of a line beginning at said Red Intracoastal Waterway Channel Marker "20" and bearing 86° to a point (approximate latitude 26°28'50" North, approximate longitude 82°05'48" West) ¼ mile south of York Island, then running parallel to and ¼ mile south of the general contour of the southern shorelines of York Island and Pine Island to the line's terminus at a point on a line bearing 360° from Red Intracoastal Waterway Channel Marker "10" (approximate latitude 26°29'16" North, approximate longitude 82°03'35" West), and west and southwest of the general contour of the western and southern shorelines of Pine Island and a line that bears 360° from said Red Intracoastal Waterway Channel Marker "10," excluding the portion of the marked channel otherwise designated in 17.108(c)(13)(vii).

(vii) Watercraft may not exceed 25 miles per hour from April 1 through November 15 in all waters of the marked channel that runs north of the power lines from the Cherry Estates area of St. James City into Pine Island Sound, east of the western boundary of the zone designated in 17.108(c)(13)(vi) , and west of a line perpendicular to the power lines that begins at the easternmost point (approximate latitude 26°30'25" North, approximate longitude 82°06'15" West) of the mangrove island on the north side of the power lines approximately 1800 feet southwest of the Galt Island Causeway.

(viii) Watercraft are required to proceed at slow speed all year in all waters of San Carlos Bay and Punta Rassa Cove east of a line that bears 352° from the northernmost tip of the northern peninsula on Punta Rassa (approximate latitude 26°29'44" North, approximate longitude 82°00'33" West), and south of a line that bears 122° from Intracoastal Waterway Green Channel Marker "99" (approximate latitude 26°31'00" North, approximate longitude 82°00'52" West), including all waters of Shell Creek and associated waterways.

(ix) Watercraft are required to proceed at slow speed all year in all waters of San Carlos Bay and the Caloosahatchee River, including the residential canals of Cape Coral, northeast of a line that bears 302° and 122° from Intracoastal Waterway Green Channel Marker "99" (approximate latitude 26°31'00" North, approximate longitude 82°00'52" West), west of a line that bears 346° from Intracoastal Waterway Green Channel Marker "93" (approximate latitude 26°31'37" North, approximate longitude 81°59'46" West), and north and northwest of the general contour of the northwestern shoreline of Shell Point and a line that bears approximately 74° from the northernmost tip (approximate latitude 26°31'31" North, approximate longitude 81°59'57" West) of Shell Point to said Intracoastal Waterway Green Channel Marker "93," excluding the Intracoastal Waterway between markers “93” and “99” (which is already designated as a Federal

manatee protection area, requiring watercraft to proceed at slow speed, and is not impacted by this rulemaking).

(x) Watercraft are required to proceed at slow speed from April 1 through November 15 and at not more than 25 miles per hour the remainder of the year in all waters of Hell Peckney Bay southeast of Hurricane Bay, northeast of the northern shorelines of Julies Island and the unnamed island immediately northwest of Julies Island and a line that bears 312° from the northwesternmost point of Julies Island (approximate latitude 26°26'37" North, approximate longitude 81°54'57" West), northwest of Estero Bay, and southwest of a line beginning at the southernmost point (approximate latitude 26°27'23" North, approximate longitude 81°55'11" West) of an unnamed mangrove peninsula in northwest Hell Peckney Bay and bearing 191° to the northernmost point (approximate latitude 26°27'19" North, approximate longitude 81°55'11" West) of an unnamed mangrove island, then running along the northern shoreline of said island to its southeasternmost point (approximate latitude 26°27'11" North, approximate longitude 81°55'05" West), then bearing 115° to a point (approximate latitude 26°27'03" North, approximate longitude 81°54'47" West) on the northwest shoreline of an unnamed mangrove island, then running along the northern shoreline of said island to its northeasternmost point (approximate latitude 26°27'02" North, approximate longitude 81°54'33" West), and then bearing 37° to the line's terminus at the westernmost point of an unnamed mangrove peninsula in eastern Hell Peckney Bay.

(xi) Watercraft are required to proceed at slow speed from April 1 through November 15 and at not more than 25 miles per hour the remainder of the year in all waters of Hendry Creek south of a line that bears 270° from a point (approximate latitude 26°28'40" North, approximate longitude 81°52'56" West) on the eastern shoreline of Hendry Creek; and all waters of Estero Bay southeast and east of Hell Peckney Bay, a line that bears 340° from a point (approximate latitude 26°25'56" North, approximate longitude 81°54'25" West) on the northern tip of an unnamed mangrove peninsula on the northeastern shoreline of Estero Island, and the northern shoreline of Estero Island, south of Hendry Creek and a line that bears 135° and 315° from Red Channel Marker "18" (approximate latitude 26°27' 46" North, approximate longitude 81°52' 00" West) in Mullock Creek, and north of a line that bears 72° from the northernmost point (approximate latitude 26°24'22" North, approximate longitude 81°52'34" West) of Black Island, including the waters of Buccaneer Lagoon at the southern end of Estero Island, but excluding:

(A) the portions of the marked channels otherwise designated in 17.108(c)(13)(xiii);

(B) the Estero River; and

(C) the waters of Big Carlos Pass east of a line beginning at a point (approximate latitude 26°24'34" North, approximate longitude 81°53'05" West) on the eastern shoreline of Estero Island and bearing 36° to a point (approximate latitude 26°24'40" North, approximate longitude 81°53'00" West) on the southern shoreline of Coon Key, south of a line beginning at a point (approximate latitude 26°24'36" North, approximate longitude 81°52'30" West) on the eastern shoreline of Coon Key and bearing 106° to a point (approximate latitude 26° 24'39" North,

approximate longitude 81°52'34" West) on the southwestern shoreline of the unnamed mangrove island north of Black Island, and west of a line beginning at a point (approximate latitude 26° 24'36" North, approximate longitude 81° 52'30" West) on the southern shoreline of said unnamed mangrove island north of Black Island and bearing 192° to the northernmost point (approximate latitude 26°24'22" North, approximate longitude 81°52'34" West) of Black Island.

(xii) Watercraft are required to proceed at slow speed from April 1 through November 15 and at not more than 25 miles per hour the remainder of the year in all waters of Estero Bay and Big Hickory Bay south of a line that bears 72° from the northernmost point (approximate latitude 26°24'22" North, approximate longitude 81°52'34" West) of Black Island, east of the centerline of State Road No. 865 (but including the waters of the embayment on the eastern side of Black Island and the waters inshore of the mouth of Big Hickory Pass that are west of State Road No. 865), and north of a line that bears 90° from a point (approximate latitude 26°20'51" North, approximate longitude 81°50'33" West) on the eastern shoreline of Little Hickory Island, excluding Spring Creek and the portions of the marked channels otherwise designated under 17.108(c)(13)(xiii) and the portion of Hickory Bay designated in 17.108(c)(13)(xiii).

(xiii) Watercraft may not exceed 25 miles per hour all year in:

(A) all waters of Big Hickory Bay north of a line that bears 90° from a point (approximate latitude 26°20'51" North, approximate longitude 81°50'33" West) on the eastern shoreline of Little Hickory Island, west of a line beginning at a point (approximate latitude 26°20'48" North, approximate longitude 81°50'24" West) on the southern shoreline of Big Hickory Bay and bearing 338° to a point (approximate latitude 26°21'39" North, approximate longitude 81°50'48" West) on the water in the northwestern end of Big Hickory Bay near the eastern end of Broadway Channel, south of a line beginning at said point on the water in the northwestern end of Big Hickory Bay and bearing 242° to the northernmost point (approximate latitude 26°21'39" North, approximate longitude 81°50'50" West) of the unnamed mangrove island south of Broadway Channel, and east of the eastern shoreline of said mangrove island and a line beginning at the southernmost point of said island (approximate latitude 26°21'07" North, approximate longitude 81°50'58" West) and bearing 167° to a point on Little Hickory Island (approximate latitude 26°21'03" North, approximate longitude 81°50'57" West);

(B) all waters of the main marked North-South channel in northern Estero Bay from Green Channel Marker "37" (approximate latitude 26°26'02" North, approximate longitude 81°54'29"West) to Green Channel Marker "57" (approximate latitude 26°25'08" North, approximate longitude 81°53'29" West);

(C) all waters of the main marked North-South channel in southern Estero Bay south of a line beginning at a point (approximate latitude 26°24'36" North, approximate longitude 81°52'30" West) on the southern shoreline of the unnamed mangrove island north of Black Island and bearing 192° to the northernmost point (approximate latitude 26°24'22" North, approximate longitude 81°52'34" West) of Black Island, and north and east of Red Channel Marker "62"

(approximate latitude 26° 21'31" North, approximate longitude 81° 51'20" West) in Broadway Channel;

(D) all waters within the portion of the marked channel leading to the Gulf of Mexico through New Pass, west of the North-South channel and east of State Road No. 865; all waters of the marked channel leading to Mullock Creek north of a line beginning at a point (approximate latitude 26° 24'36" North, approximate longitude 81° 52'30" West) on the eastern shoreline of Coon Key and bearing 106° to a point (approximate latitude 26° 24'39" North, approximate longitude 81° 52'34" West) on the southwestern shoreline of the unnamed mangrove island north of Black Island, and south of Red Channel Marker "18" (approximate latitude 26°27'46" North, approximate longitude 81°52'00" West);

(E) all waters of the marked channel leading from the Mullock Creek Channel to the Estero River, west of the mouth of the Estero River. (This designation only applies if a channel is marked in accordance with permits issued by all applicable state and federal authorities. In the absence of a properly permitted channel, this area is as designated under 17.108(c)(13)(xi);

(F) all waters of the marked channel commonly known as Alternate Route Channel, with said channel generally running between Channel Marker "1" (approximate latitude 26°24'29" North, approximate longitude 81°51'53" West) and Channel Marker "10" (approximate latitude 26°24'00" North, approximate longitude 81°51'09" West);

(G) all waters of the marked channel commonly known as Coconut Channel, with said channel generally running between Channel Marker "1" (approximate latitude 26°23'44" North, approximate longitude 81°50'55" West) and Channel Marker "23" (approximate latitude 26°24'00" North, approximate longitude 81°50'30" West);

(H) all waters of the marked channel commonly known as Southern Passage Channel, with said channel generally running between Channel Marker "1" (approximate latitude 26°22'58" North, approximate longitude 81°51'57" West) and Channel Marker "22" (approximate latitude 26°23'27" North, approximate longitude 81°50'46" West); and

(I) all waters of the marked channel leading from the Southern Passage Channel to Spring Creek, west of the mouth of Spring Creek.

3. Reason for Determination

In order to establish a site as a manatee protection area, we must determine that there is substantial evidence showing such establishment is necessary to prevent the take of one or more manatees, or in the case of an emergency designation, that the taking is imminent. In documenting historic manatee use and harm and harassment, we relied on the best available information, including aerial survey and mortality data and additional information from FMRI and the U.S. Geological Survey's Sirenia Project, manatee experts, the public, and our best professional judgment.

Manatee presence has been documented in this area through aerial surveys, photo-identification studies, telemetry studies, and a carcass salvage program (FWCC 2000). Per these studies, it is apparent that the area is used seasonally in some areas and throughout the year in others. While manatees can be found throughout the year at all sites, primary warm weather use areas include Estero Bay and portions of Pine Island Sound. The remainder receives substantial year-round use.

The areas have historically been regulated using the same regulatory scheme included in this proposed designation. The voiding of the State protection measures in a recent court case will almost certainly result in high speed vessel operation in areas frequented by manatees. Taking of manatees is a certainty and there is evidence that such has already occurred.

4. Special Area Management

Manatee refuges designated in this rule would be posted with regulatory signs and would be consistent with extant Federal, State and local government signage designating manatee protection areas in the vicinity of these sites. We would ensure that the sites are posted and that signs are maintained. In addition to posting these areas, we would enforce these measures with Service law enforcement agents. The State has indicated that they will enforce the areas as well.

5. Effects on Public Use

Public use of waters designated as refuges would be affected to varying degrees depending on site-specific restrictions. Areas designated as refuges would have site-specific restrictions placed on waterborne activities; some restrictions would be seasonal and others year-round. These restrictions would primarily limit the speed at which watercraft travel while in the designated areas. Designated areas include watercraft travel corridors, recreational areas (including fishing and water skiing areas, areas used by personal watercraft, and other uses), marine industrial sites, and sites used for other activities. The effect of such restrictions would require recreationists and commercial fishing interests to change operating behaviors and/or use alternate sites, especially in the case of recreationists and commercial fishing interests engaged in high speed activities. However, most of these interests have previously been subject to these restrictions.

6. Conclusion

This alternative, which includes the designation, posting and enforcement of a manatee refuge, would be expected to increase public awareness of the potential for take of Florida manatees in areas of high manatee use. Public use of these areas would be affected to varying degrees due to certain restrictions within the proposed refuges. These restrictions should prevent take of manatees.

This alternative is the Service's preferred alternative.

C. Summary of Impacts of Alternatives

1. Biological Value of the Refuges

This area is important for its use as travel and migration corridors, and as feeding, calving, mating and resting areas. The selection of this area was based on its importance to manatees as an individual site and as an important links within the local ecosystem. Details can be found in Section V B. in this document.

2. Adequacy of Funding

At this time, we believe that there is sufficient funding available to manage the protected area.

3. Past Actions

Suggestions to the effect that manatee populations may be increasing in the face of past actions by Federal, State, and local governments size are encouraging. However, there has been no confirmation that significant threats to the species, including human-related mortality, injury, and harassment, and habitat alteration, have been reduced or eliminated to the extent that the Florida manatee may be reclassified from endangered to threatened status. Pursuant to our mission, we continue to assess this information with the goal of meeting our manatee recovery objectives.

4. Future Actions

Possible future actions associated with the preferred alternative include enhanced law enforcement in the area designated as a refuge and the possible designation of additional areas as refuges and sanctuaries if the need becomes apparent. Such actions are consistent with our goal of recovering the Florida manatee to the extent that it would be removed from the Federal endangered species list.

5. Cumulative Effects

Observations by law enforcement officers and manatee researchers imply that "take" of manatees and human-related manatee mortalities are reduced in areas designated as refuges or sanctuaries. This indicates that, on a site-specific basis, previous actions to protect the manatee have been successful. However, areas outside of existing refuges and sanctuaries continue to experience human-related manatee injuries and mortalities. The designation of additional refuges and sanctuaries in areas heavily used by manatee and humans alike is expected to decrease the potential for "take" in these areas and will enhance public awareness of the measures necessary to protect the manatee. The cumulative impact of designating additional refuges and sanctuaries on the public has also been assessed. Impacts such as loss of recreational areas, increase in travel time, and general inconvenience that many boaters may experience due to these refuges will generally be limited to small areas within their overall travel area.

VI. Consultation and Coordination with Others

A. Public Involvement

The normal rulemaking process for this proposed rule will provide an opportunity for public review and comment.

B. List of Agencies and Individuals Receiving Copies of this EA

To date, no agencies or individuals have received copies of this EA.

VII. References

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VIII. Appendix

(INCLUDE FLORIDA MANATEE RECOVERY PLAN, THIRD REVISION)

[available online at: http://northflorida.fws.gov/Manatee/manatees.htm]